

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開2000-200511

(P2000-200511A)

(43) 公開日 平成12年7月18日 (2000.7.18)

(51) Int.Cl. ⁷	識別記号	F I	テマコード* (参考)
F 2 1 V 15/00		F 2 1 M 7/00	G
29/00		G 0 3 B 21/16	
G 0 3 B 21/16		27/52	B
27/52		H 0 1 J 61/30	C
H 0 1 J 61/30		F 2 1 V 7/20	Z

審査請求 有 請求項の数 4 O L (全 5 頁) 最終頁に続く

(21) 出願番号 特願平11-203267

(22) 出願日 平成11年7月16日 (1999.7.16)

(31) 優先権主張番号 特願平10-310793

(32) 優先日 平成10年10月30日 (1998.10.30)

(33) 優先権主張国 日本 (J P)

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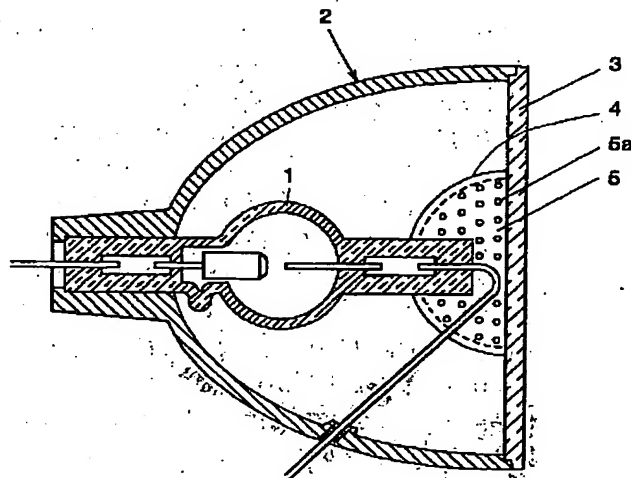
弁理士 森 義明

(54) 【発明の名称】 放電灯

(57) 【要約】

【課題】 ランプが破裂した際の破片の飛散を有効に防止でき、しかも、ランプを高圧、高ワット化することが可能な放電灯を提供する。

【解決手段】 リフレクタ(2)とこのリフレクタ(2)前面に装着されたフロントガラス(3)を備えた放電灯において、リフレクタ(2)には通気口(4)が設けられており、この通気口(4)にはメッシュ(6)または多孔板(5)が配されている。



(2)

【特許請求の範囲】

【請求項 1】 リフレクタと該リフレクタ前面に装着されたフロントガラスを備えた放電灯において、該リフレクタには通気口が設けられており、該通気口にはメッシュまたは多孔板が配されていることを特徴とする放電灯。

【請求項 2】 リフレクタと該リフレクタ前面に装着されたフロントガラスを備えた放電灯において、該リフレクタには通気口が設けられており、該通気口にはスリットを有した板が配されており、該スリットを有した板には該スリットを通してリフレクタ内に導入された外気の進行方向をランプの高温部に向けるための整流部が備えられていることを特徴とする放電灯。

【請求項 3】 通気口はリフレクタに設けられた貫通孔又はリフレクタの前面開口部の切り欠きにより形成されていることを特徴とする請求項 1 又は請求項 2 記載の放電灯。

【請求項 4】 リフレクタと該リフレクタ前面に装着されたフロントガラスを備えた放電灯において、該リフレクタには多数の貫通孔よりなる通気部が形成されていることを特徴とする放電灯。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明はプロジェクタ等の光源として用いられる放電灯に関するものであり、特に高ワット光源に適したものに関する。

【0002】

【従来の技術】 放電灯は各種照明装置の光源として利用されており、近年では画像投影用のプロジェクタの光源としても利用されている。

【0003】 プロジェクタの高輝度化のために放電灯の高圧化と高ワット化が急激に進められている。しかしながら、高圧化は爆発の危険性が高くなる。

【0004】 図 5 は従来放電灯の縦断面図である。図中、(1)はランプ、(2)はリフレクタ（反射鏡）である。

【0005】 万一、ランプ(1)が破裂した場合でも、破片が放電灯の前方に飛び散らないようにリフレクタ(2)の前面には厚手のフロントガラス(3)が装着されている。すなわち、ランプはリフレクタ(2)とフロントガラス(3)により密閉されることとなる。

【0006】 しかしながら、このような密閉型構造とした場合、ランプ(1)を点灯した際にランプの周囲の空気が加熱され、リフレクタ(2)とフロントガラス(3)により形成される密閉空間の温度が大きく上昇してしまう。したがって、この熱的事情により事実上ランプ(1)は 150W が限度であり、これ以上ランプを高圧、高ワット化するのは困難である。

【0007】

【発明が解決しようとする課題】 そこで本発明は、ランプが破裂した際の破片の飛散を有効に防止でき、しか

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も、ランプを高圧、高ワット化することが可能な放電灯を提供することを課題とする。

【0008】

【課題を解決するための手段】 本発明の請求項 1 の放電灯は、リフレクタ(2)と該リフレクタ(2)前面に装着されたフロントガラス(3)を備えた放電灯において、該リフレクタ(2)には通気口(4)が設けられており、該通気口(4)にはメッシュ(6)または多孔板(5)が配されていることを特徴とする。

10 【0009】 これによればメッシュまたは多孔板の網目や貫通孔を通してリフレクタ(2)内の加熱された空気を排出することができるので、ランプの周囲の温度が過度に高くなることを防止することができる。そのため、150W を越える高圧、高ワットの放電灯とすることができる。

20 【0010】 請求項 2 の放電灯は、リフレクタ(2)と該リフレクタ(2)前面に装着されたフロントガラス(3)を備えた放電灯において、該リフレクタ(2)には通気口(4)が設けられており、該通気口(4)にはスリット(8a)を有した板(8)が配されており、該スリットを有した板(8)には該スリット(8a)を通してリフレクタ(2)内に導入された外気の進行方向をランプ(1)の高温部に向けるための整流部(8b)が備えられていることを特徴とする。

30 【0011】 これによれば、スリット(8a)を通して導入された外気は、整流部(8b)により整流され、ランプ(1)の高温になっている箇所に向かうので、ランプ(1)の周囲を効率的に冷却し、他方のスリット(7a)から排出されるので、ランプの周囲の温度が過度に高くなることを防止することができ 150W を越える高圧、高ワットの放電灯とすることができる。

40 【0012】 本発明の請求項 3 の放電灯は、請求項 1 又は請求項 2 の放電灯において、通気口(4)はリフレクタ(2)に設けられた貫通孔又はリフレクタ(2)の前面開口部の切り欠きにより形成されていることを特徴とする。

【0013】 これによれば、メッシュ(6)または多孔板(5)を取り付ける通気口をリフレクタに確保することができる。

50 【0014】 本発明の請求項 4 の放電灯は、リフレクタ(2)と該リフレクタ(2)前面に装着されたフロントガラス(3)を備えた放電灯において、該リフレクタ(2)には多数の貫通孔よりなる通気部が形成されていることを特徴とする。

【0015】 これによれば、メッシュや多孔板を用いなくても、リフレクタ自体を多孔板として通気を確保することができる。

【0016】

【発明の実施の形態】 以下、本発明を好適な実施例を用いて説明する。

60 【0017】 【実施例 1】 図 1 は本実施例の縦断面図、図 2 は本実施例の横（平面）断面図である。(1)はラン

(3)

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プ、(2)はリフレクタ、(3)はフロントガラスである。

(4)はリフレクタの前方開口部（フロントガラス(3)を着着する箇所）側に切り欠いたように2箇所に設けられた開口部である。

【0018】尚、本実施例において開口部(4)をリフレクタの前方開口部側に切り欠いたように（前方開口部と連通した状態に）設けたのは、加工がしやすいことと、この箇所は開口による反射効果の低減が比較的少ないからである。

【0019】但し、本発明における開口部の箇所はこの位置、形状に限定されるものではなく、例えば前方開口部と接しない状態で、円形、楕円形、角形等の任意の形状の開口部としても良い。

【0020】(5)は多孔板としてのパンチングメタルであり、リフレクタ(2)の開口部(4)に取り付けられている。

【0021】尚、本実施例では多孔板としてパンチングメタル(5)を用いたが、ドリル孔やスリットが多数設けられた板や、切り目を入れた金属板を引き延ばして網状にしたエキスパンドメタル等も使用することができる。

【0022】パンチングメタル(5)の穴(5a)を通して、リフレクタ(2)内外の通気が確保されるため、リフレクタ(2)とフロントガラス(3)により囲まれたランプ(1)の周りの空間は密閉空間とならず、ランプ点灯により生じた熱はこの穴(5a)を通して外部に排出される。したがって、ランプの高圧、高ワット化を図ることができ、例えば150Wを越える放電灯を作成することが可能となる。

【0023】又、ランプ(1)が破裂した場合でも、破片はこの穴(5a)を通ることができず、外部に飛散することはない。

【0024】このように、ランプ破裂時の破片の飛散を有効に防止しつつ、放電灯の高圧、高ワット化を図ることができるので、安全で明るい光源を提供することができる。

【0025】【実施例2】図3は本実施例の縦断面図であり、図4は本実施例の横（平面）断面図である。

【0026】実施例1の多孔板(5)の代わりに金属製のメッシュ(6)を用いたが、それ以外の構成は実施例1と同様である。

【0027】メッシュ(6)の網目を通して、通気が確保されるので、ランプ(1)点灯により生じた熱はこの網目を通して外部に排出される。又、ランプ(1)が破裂しても破片はメッシュに遮られ、外部に飛散しない。

【0028】【実施例3（図示せず）】、実施例1及び実施例2はリフレクタ(2)に開口部を設け、そこに多孔板(5)又はメッシュ(6)を取り付けて通気部を形成したが、本実施例はリフレクタ自体に径の小さな貫通孔を多数設けて直接に通気部を形成した。

【0029】実施例1や実施例2と同様の効果が得られ

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る他、実施例1や実施例2に比べて部品点数が少なくなるというメリットがある。

【0030】【実施例4】図6は本実施例の図横（平面）断面図、図7は本実施例の縦断面図である。本実施例もリフレクタ(2)に設けた開口部からリフレクタ(2)内外の通気を確保してランプ(1)周囲が高温となるのを防止するという点は、上記の各実施例と同様である。

【0031】本実施例では2箇所の開口部(4)にスリットを有するスリット板(7)、(8)を取り付けている。一方のスリット板(7)は単にスリット(7a)を有しているだけであるが、他方のスリット板(8)にはスリット(8a)が設けられていると共に、このスリット(8a)に沿って内側に整流部(8b)が設けられている。

【0032】本実施例では、整流部(8b)はスリット板(8)にスリット(8a)を設ける際に切り起こした部分を利用したが、整流部を別体で製作して取り付けても良い。

【0033】スリット(8a)から導入された外気は整流部(8b)によりランプ(1)の高温箇所に向かうように整流され、効率良くランプ(1)の周囲を冷却し、他方のスリット板(7)のスリット(7a)から外部に排出される。

【0034】整流部(8b)が設けられたスリット板(8)から外気が導入され、他方のスリット板(7)から排出されやすいようにするには、熱による空気の対流を利用して整流部(8b)が設けられたスリット板(8)が下方となるようにすることが好ましい。

【0035】又、冷却を更に効率よく積極的に行うためには、放電灯の側方等にスリット(8a)に向かって風を送り込むファン等の送風装置を設けておき、強制的にリフレクタ(2)内に外気を送り込むようにしても良い。

【0036】尚、本実施例では一方のスリット板(8)のみに整流部(8b)を設けたが、両方のスリット板(7)、(8)に整流部を設けるようにしても良い。

【0037】以上の実施例1から実施例4を通して、通気のための穴やスリットの大きさ、数、位置、形状、メッシュの細かさ等はランプの大きさ、ワット数、圧力、材質、リフレクタの大きさ、形状等を適宜考慮して有効な放熱と、破片飛散防止効果が得られるように定めればよい。

【0038】

【発明の効果】以上述べたように本発明により、ランプが破裂した際の破片の飛散を有効に防止でき、しかも、ランプを高圧、高ワット化することが可能な放電灯を提供することができた。

【図面の簡単な説明】

【図1】実施例1の縦断面図。

【図2】実施例1の横（平面）断面図。

【図3】実施例2の縦断面図。

【図4】実施例2の横（平面）断面図。

【図5】従来の放電灯の縦断面図。

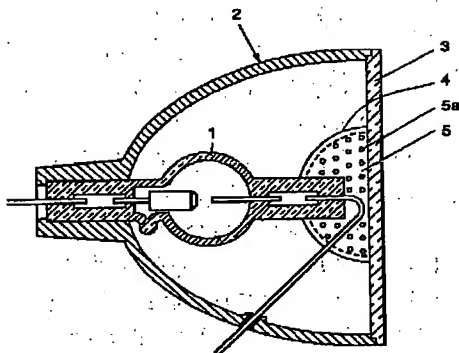
【図6】実施例4の横（平面）断面図。

【図7】実施例4の縦断面図。

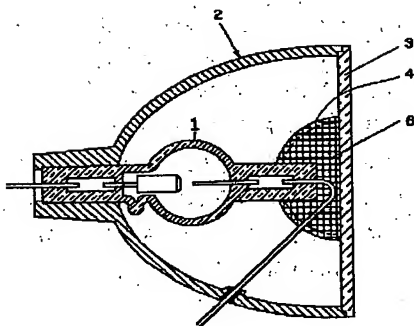
【符号の説明】

- (1) ランプ
- (2) リフレクタ
- (3) フロントガラス
- (4) リフレクタの開口部

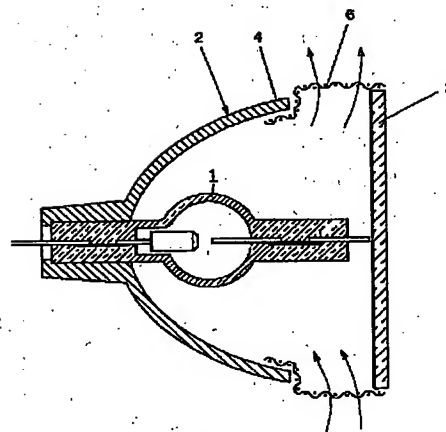
【図1】



【図3】



【図4】



(4)

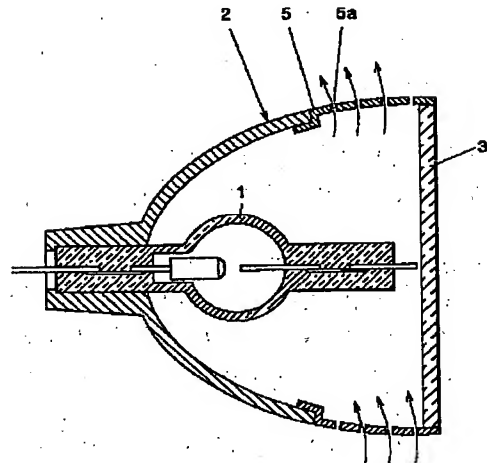
- (5) 多孔板 (パンチングメタル)
- (5a) 多孔板の貫通孔

(6) メッシュ

- (8) スリット板
- (8a) スリット

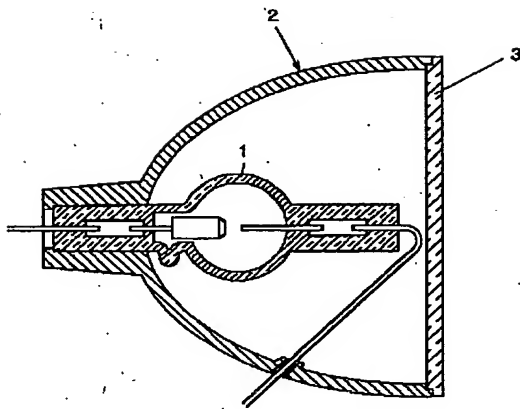
(8b) 整流部

【図2】

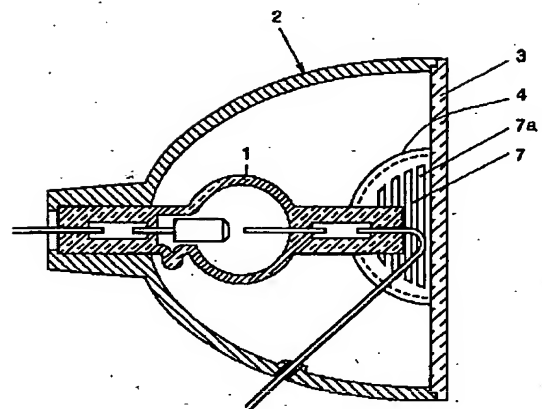


(5)

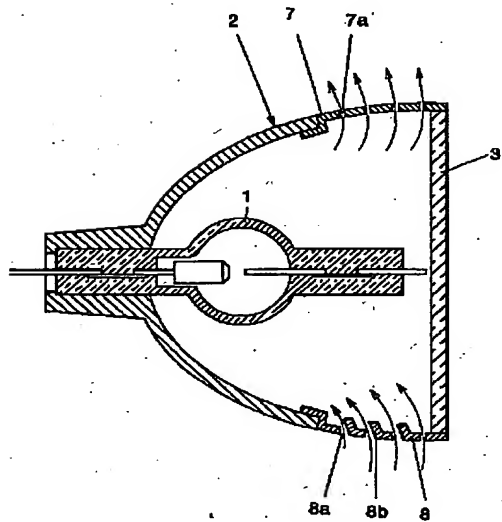
【図5】



【図6】



【図7】



フロントページの続き

(51) Int. Cl. 7

// F 2 1 V 7/20

29/00

識別記号

F I

F 2 1 V 29/00

F 2 1 M 7/00

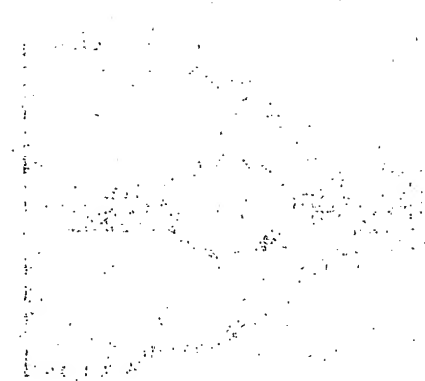
テーマコード* (参考)

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CLAIMS

[Claim(s)]

[Claim 1] The electric-discharge lamp which the bleeder is prepared in this reflector and characterized by arranging a mesh or a perforated plate on this bleeder in the electric-discharge lamp equipped with the windshield with which the reflector and this front face of a reflector were equipped.

[Claim 2] The electric-discharge lamp which the bleeder is prepared in this reflector, and the plate with a slit is arranged on this bleeder in the electric-discharge lamp equipped with the windshield with which the reflector and this front face of a reflector were equipped, and is characterized by having the rectification section for turning to the elevated-temperature section of a lamp the travelling direction of the open air introduced into the plate with this slit in the reflector through this slit.

[Claim 3] A bleeder is a electric-discharge lamp according to claim 1 or 2 characterized by being formed of notching of the through tube prepared in the reflector, or front opening of a reflector.

[Claim 4] The electric-discharge lamp characterized by forming the aeration section which becomes this reflector from many through tubes in the electric-discharge lamp equipped with the windshield with which the reflector and this front face of a reflector were equipped.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the thing suitable for especially the high watt light source about the electric-discharge lamp used as the light sources, such as a projector.

[0002]

[Description of the Prior Art] The electric-discharge lamp is used as the light source of various lighting systems, and is used also as the light source of the projector for image projection in recent years.

[0003] High-pressure-izing of a electric-discharge lamp and high watt-ization are rapidly advanced for the raise in the brightness of a projector. However, as for high-pressure-izing, the danger of explosion becomes high.

[0004] Drawing 5 is drawing of longitudinal section of a electric-discharge lamp conventionally. As for (1), a lamp and (2) are reflectors (reflecting mirror) among drawing.

[0005] Even when a lamp (1) explodes, the front face of a reflector (2) should be equipped with the thick windshield (3) so that a fragment may not scatter ahead of a electric-discharge lamp. That is, a lamp will be sealed by a reflector (2) and the windshield (3).

[0006] However, when it considers as such closed mold structure, when a lamp (1) is turned on, the air around a lamp will be heated, and the temperature of the closed space formed of a reflector (2) and a windshield (3) will rise greatly. Therefore, as for a lamp (1), 150W are a limit as a matter of fact by this thermal situation, and it is difficult in a lamp high pressure and to form high watt more than this.

[0007]

[Problem(s) to be Solved by the Invention] Then, this invention can prevent effectively scattering of the fragment at the time of a lamp exploding, and, moreover, makes it a technical problem to offer high pressure and the electric-discharge lamp which can form high watt for a lamp.

[0008]

[Means for Solving the Problem] In the electric-discharge lamp equipped with the windshield (3) with which the reflector (2) and the front face of this reflector (2) were equipped, the bleeder (4) is prepared in this reflector (2), and the electric-discharge lamp of claim 1 of this invention is characterized by arranging a mesh (6) or a perforated plate (5) on this bleeder (4).

[0009] Since the air with which it was heated in the reflector (2) through a mesh, or the mesh and through tube of a perforated plate can be discharged according to this, it can prevent that the temperature around a lamp becomes high too much. Therefore, it can consider as the high pressure exceeding 150W, and the electric-discharge lamp of high watt.

[0010] In the electric-discharge lamp equipped with the windshield (3) by which the reflector (2) and the front face of this reflector (2) were equipped with the electric-discharge lamp of claim 2 The bleeder (4) is prepared in this reflector (2), and the plate (8) with a slit (8a) is arranged on this bleeder (4). It is characterized by equipping the plate (8) with this slit with the rectification section (8b) for turning to the elevated-temperature section of a lamp (1) the travelling direction of the open air introduced in the reflector (2) through this slit (8a).

[0011] According to this, the open air introduced through the slit (8a) Since it goes to the part which is rectified by the rectification section (8b) and has become the elevated temperature of a lamp (1) Since the perimeter of a lamp (1) is cooled efficiently and it is discharged from the slit (7a) of another side, it can consider as the high pressure which can prevent that the temperature around a lamp becomes high too much, and exceeds 150W, and the electric-discharge lamp of high watt.

[0012] The electric-discharge lamp of claim 3 of this invention is characterized by forming the bleeder (4) of notching of the through tube prepared in the reflector (2), or front opening of a reflector (2) in the electric-discharge lamp of claim 1 or claim 2.

[0013] According to this, the bleeder which attaches a mesh (6) or a perforated plate (5) is securable for a reflector.

[0014] The electric-discharge lamp of claim 4 of this invention is characterized by forming the aeration section which becomes this reflector (2) from many through tubes in the electric-discharge lamp equipped with the windshield (3) with which the reflector (2) and the front face of this reflector (2) were equipped.

[0015] According to this, even if it uses neither a mesh nor a perforated plate, aeration is securable by using the reflector itself as a perforated plate.

[0016]

[Embodiment of the Invention] Hereafter, this invention is explained using a suitable example.

[0017] [Example 1] drawing 1 is drawing of longitudinal section of this example, and drawing 2 is the horizontal (flat surface) sectional view of this example. As for a lamp and (2), (1) is [a reflector and (3)] windshields. (4) is opening prepared in two places as cut and lacked in the front opening (part equipped with windshield (3)) side of a reflector.

[0018] In addition, processing tending to carry out having prepared, as opening (4) was cut and lacked in the front opening side of a reflector in this example (in the condition that it was open for free passage with front opening), and this part are because there is comparatively little reduction of the reflection effect by opening.

[0019] However, the part of opening in this invention is in the condition which is not limited to this location and a configuration and does not touch front opening, and is good also as opening of the configuration of arbitration, such as circular, an ellipse form, and a square shape.

[0020] (5) is a punching metal as a perforated plate, and it is attached in opening (4) of a reflector (2).

[0021] In addition, although the punching metal (5) was used as a perforated plate in this example, the expanded metal which extended the plate with which many drilled holes and slits were prepared, and the metal plate into which the end eye was put, and was made reticulated can be used.

[0022] Since it passes along the hole (5a) of a punching metal (5) and the aeration of the inside and outside of a reflector (2) is secured, the surrounding space of the lamp (1) surrounded by the reflector (2) and the windshield (3) does not turn into a closed space, but the heat produced by lamp lighting is discharged outside through this hole (5a). Therefore, it becomes possible to create the electric-discharge lamp which can attain high pressure of a lamp, and high watt-ization, for example, exceeds 150W.

[0023] Moreover, even when a lamp (1) explodes, a fragment cannot pass along this hole (5a), and does not disperse outside.

[0024] Thus, since high pressure of a electric-discharge lamp and high watt-ization can be attained preventing effectively scattering of the fragment at the time of a lamp burst, the safe and bright light source can be offered.

[0025] [Example 2] drawing 3 is drawing of longitudinal section of this example, and drawing 4 is the horizontal (flat surface) sectional view of this example.

[0026] Although a metal mesh (6) was used instead of the perforated plate (5) of an example 1, the other configuration is the same as that of an example 1.

[0027] Since it passes along the mesh of a mesh (6) and aeration is secured, the heat produced by lamp (1) lighting is discharged outside through this mesh. Moreover, even if a lamp (1) explodes, a fragment is interrupted by the mesh and does not disperse outside.

[0028] Although opening was prepared in the reflector (2), a perforated plate (5) or a mesh (6) was attached there and the aeration section was formed, this example prepared many small through tubes of a path in the reflector itself, and, as for the [example 3 (not shown)] example 1 and the example 2, formed the aeration section directly.

[0029] The same effectiveness as an example 1 or an example 2 is acquired, and also there is a merit that components mark decrease compared with an example 1 or an example 2.

[0030] [Example 4] drawing 6 is the **** (flat surface) sectional view of this example, and drawing 7 is the longitudinal section of this example. The point of preventing securing the aeration of the inside and outside of a reflector (2) from opening which also prepared this example in the reflector (2), and the perimeter of a lamp (1) serving as an elevated temperature is the same as each above-mentioned example.

[0031] In this example, the slit plate (7) which has a slit in two openings (4), and (8) are attached. Although one slit plate (7) only has the slit (7a), while the slit (8a) is prepared in the slit plate (8) of another side, along with this slit (8a), the rectification section (8b) is prepared inside.

[0032] In this example, although the rectification section (8b) used the part raised when preparing a slit (8a) in a slit plate (8), it may manufacture and attach the rectification section with another object.

[0033] It is rectified so that it may go to the elevated-temperature part of a lamp (1) by the rectification section (8b), and the open air introduced from the slit (8a) cools the perimeter of a lamp (1) efficiently, and is discharged outside from the slit (7a) of the slit plate (7) of another side.

[0034] In order to introduce the open air from the slit plate (8) with which the rectification section (8b) was prepared and to make it be easy to be discharged from the slit plate (7) of another side, it is desirable to make it the slit plate (8) with which the rectification section (8b) was prepared using the convection current of the air by heat serve as a lower part.

[0035] Moreover, in order to cool positively still more efficiently, ventilation equipments, such as a fan who sends a wind into the side of a electric-discharge lamp etc. toward a slit (8a), are formed, and you may make it send in the open air in a reflector (2) compulsorily.

[0036] In addition, although the rectification section (8b) was prepared in one slit plate (8) in this example, you may make it establish the Processing Division in both slit plates (7) and (8).

[0037] It lets an example 4 pass from the above example 1, and the hole for aeration, the magnitude of a slit, a number, a location, a configuration, the fineness of a mesh, etc. should just determine that the fragment scattering prevention effectiveness is acquired with effective heat dissipation suitably in consideration of the magnitude of a lamp, a wattage, a pressure, the quality of the material, the magnitude of a reflector, a configuration, etc.

[0038]

[Effect of the Invention] As stated above, by this invention, scattering of the fragment at the time of a lamp exploding could be prevented effectively, and moreover, high pressure and the electric-discharge lamp which can form high watt were able to be offered for the lamp.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the thing suitable for especially the high watt light source about the electric-discharge lamp used as the light sources, such as a projector.

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PRIOR ART

[Description of the Prior Art] The electric-discharge lamp is used as the light source of various lighting systems, and is used also as the light source of the projector for image projection in recent years.

[0003] High-pressure-izing of a electric-discharge lamp and high watt-ization are rapidly advanced for the raise in the brightness of a projector. However, as for high-pressure-izing, the danger of explosion becomes high.

[0004] Drawing 5 is drawing of longitudinal section of a electric-discharge lamp conventionally. As for (1), a lamp and (2) are reflectors (reflecting mirror) among drawing.

[0005] Even when a lamp (1) explodes, the front face of a reflector (2) should be equipped with the thick windshield (3) so that a fragment may not scatter ahead of a electric-discharge lamp. That is, a lamp will be sealed by a reflector (2) and the windshield (3).

[0006] However, when it considers as such closed mold structure, when a lamp (1) is turned on, the air around a lamp will be heated, and the temperature of the closed space formed of a reflector (2) and a windshield (3) will rise greatly. Therefore, as for a lamp (1), 150W are a limit as a matter of fact by this thermal situation, and it is difficult in a lamp high pressure and to form high watt more than this.

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EFFECT OF THE INVENTION

[Effect of the Invention] As stated above, by this invention, scattering of the fragment at the time of a lamp exploding could be prevented effectively, and moreover, high pressure and the electric-discharge lamp which can form high watt were able to be offered for the lamp.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Then, this invention can prevent effectively scattering of the fragment at the time of a lamp exploding, and, moreover, makes it a technical problem to offer high pressure and the electric-discharge lamp which can form high watt for a lamp.

[Translation done.]

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MEANS

[Means for Solving the Problem] In the electric-discharge lamp equipped with the windshield (3) with which the reflector (2) and the front face of this reflector (2) were equipped, the bleeder (4) is prepared in this reflector (2), and the electric-discharge lamp of claim 1 of this invention is characterized by arranging a mesh (6) or a perforated plate (5) on this bleeder (4).

[0009] Since the air with which it was heated in the reflector (2) through a mesh, or the mesh and through tube of a perforated plate can be discharged according to this, it can prevent that the temperature around a lamp becomes high too much. Therefore, it can consider as the high pressure exceeding 150W, and the electric-discharge lamp of high watt.

[0010] In the electric-discharge lamp equipped with the windshield (3) by which the reflector (2) and the front face of this reflector (2) were equipped with the electric-discharge lamp of claim 2. The bleeder (4) is prepared in this reflector (2), and the plate (8) with a slit (8a) is arranged on this bleeder (4). It is characterized by equipping the plate (8) with this slit with the rectification section (8b) for turning to the elevated-temperature section of a lamp (1) the travelling direction of the open air introduced in the reflector (2) through this slit (8a).

[0011] According to this, the open air introduced through the slit (8a) Since it goes to the part which is rectified by the rectification section (8b) and has become the elevated temperature of a lamp (1) Since the perimeter of a lamp (1) is cooled efficiently and it is discharged from the slit (7a) of another side, it can consider as the high pressure which can prevent that the temperature around a lamp becomes high too much, and exceeds 150W, and the electric-discharge lamp of high watt.

[0012] The electric-discharge lamp of claim 3 of this invention is characterized by forming the bleeder (4) of notching of the through tube prepared in the reflector (2), or front opening of a reflector (2) in the electric-discharge lamp of claim 1 or claim 2.

[0013] According to this, the bleeder which attaches a mesh (6) or a perforated plate (5) is securable for a reflector.

[0014] The electric-discharge lamp of claim 4 of this invention is characterized by forming the aeration section which becomes this reflector (2) from many through tubes in the electric-discharge lamp equipped with the windshield (3) with which the reflector (2) and the front face of this reflector (2) were equipped.

[0015] According to this, even if it uses neither a mesh nor a perforated plate, aeration is securable by using the reflector itself as a perforated plate.

[0016]

[Embodiment of the Invention] Hereafter, this invention is explained using a suitable example.

[0017] [Example 1] drawing 1 is drawing of longitudinal section of this example, and drawing 2 is the horizontal (flat surface) sectional view of this example. As for a lamp and (2), (1) is [a reflector and (3)] windshields. (4) is opening prepared in two places as cut and lacked in the front opening (part equipped with windshield (3)) side of a reflector.

[0018] In addition, processing tending to carry out having prepared, as opening (4) was cut and lacked in the front opening side of a reflector in this example (in the condition that it was open for free passage with front opening), and this part are because there is comparatively little reduction of the reflection effect by opening.

[0019] However, the part of opening in this invention is in the condition which is not limited to this location and a configuration and does not touch front opening, and is good also as opening of the configuration of arbitration, such as circular, an ellipse form, and a square shape.

[0020] (5) is a punching metal as a perforated plate, and it is attached in opening (4) of a reflector (2).

[0021] In addition, although the punching metal (5) was used as a perforated plate in this example, the expanded metal which extended the plate with which many drilled holes and slits were prepared, and the metal plate into which the end eye was put, and was made reticulated can be used.

[0022] Since it passes along the hole (5a) of a punching metal (5) and the aeration of the inside and outside of a reflector (2) is secured, the surrounding space of the lamp (1) surrounded by the reflector (2) and the windshield (3) does not turn into a closed space, but the heat produced by lamp lighting is discharged outside through this hole (5a). Therefore, it becomes possible to create the electric-discharge lamp which can attain high pressure of a lamp, and high watt-ization, for example, exceeds 150W.

[0023] Moreover, even when a lamp (1) explodes, a fragment cannot pass along this hole (5a), and does not disperse outside.

[0024] Thus, since high pressure of a electric-discharge lamp and high watt-ization can be attained preventing effectively scattering of the fragment at the time of a lamp burst, the safe and bright light source can be offered.

[0025] [Example 2] drawing 3 is drawing of longitudinal section of this example, and drawing 4 is the horizontal (flat surface) sectional view of this example.

[0026] Although a metal mesh (6) was used instead of the perforated plate (5) of an example 1, the other configuration is the same as that of an example 1.

[0027] Since it passes along the mesh of a mesh (6) and aeration is secured, the heat produced by lamp (1) lighting is discharged outside through this mesh. Moreover, even if a lamp (1) explodes, a fragment is interrupted by the mesh and does not disperse outside.

[0028] Although opening was prepared in the reflector (2), a perforated plate (5) or a mesh (6) was attached there and the aeration section was formed, this example prepared many small through tubes of a path in the reflector itself, and, as for the [example 3 (not shown)] example 1 and the example 2, formed the aeration section directly.

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[0031] In this example, the slit plate (7) which has a slit in two openings (4), and (8) are attached. Although one slit plate (7) only has the slit (7a), while the slit (8a) is prepared in the slit plate (8) of another side, along with this slit (8a), the rectification section (8b) is prepared inside.

[0032] In this example, although the rectification section (8b) used the part raised when preparing a slit (8a) in a slit plate (8), it may manufacture and attach the rectification section with another object.

[0033] It is rectified so that it may go to the elevated-temperature part of a lamp (1) by the rectification section (8b), and the open air introduced from the slit (8a) cools the perimeter of a lamp (1) efficiently, and is discharged outside from the slit (7a) of the slit plate (7) of another side.

[0034] In order to introduce the open air from the slit plate (8) with which the rectification section (8b) was prepared and to make it be easy to be discharged from the slit plate (7) of another side, it is desirable to make it the slit plate (8) with which the rectification section (8b) was prepared using the convection current of the air by heat serve as a lower part.

[0035] Moreover, in order to cool positively still more efficiently, ventilation equipments, such as a fan who sends a wind into the side of a electric-discharge lamp etc. toward a slit (8a), are

formed, and you may make it send in the open air in a reflector (2) compulsorily.

[0036] In addition, although the rectification section (8b) was prepared in one slit plate (8) in this example, you may make it establish the Processing Division in both slit plates (7) and (8).

[0037] It lets an example 4 pass from the above example 1, and the hole for aeration, the magnitude of a slit, a number, a location, a configuration, the fineness of a mesh, etc. should just determine that the fragment scattering prevention effectiveness is acquired with effective heat dissipation suitably in consideration of the magnitude of a lamp, a wattage, a pressure, the quality of the material, the magnitude of a reflector, a configuration, etc.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Drawing of longitudinal section of an example 1.

[Drawing 2] The horizontal (flat surface) sectional view of an example 1.

[Drawing 3] Drawing of longitudinal section of an example 2.

[Drawing 4] The horizontal (flat surface) sectional view of an example 2.

[Drawing 5] Drawing of longitudinal section of the conventional electric-discharge lamp.

[Drawing 6] The horizontal (flat surface) sectional view of an example 4.

[Drawing 7] Drawing of longitudinal section of an example 4.

[Description of Notations]

(1) Lamp

(2) Reflector

(3) Windshield

(4) Opening of a reflector

(5) Perforated plate (punching metal)

(5a) The through tube of a perforated plate

(6) Mesh

(8) Slit plate

(8a) Slit

(8b) Rectification section

[Translation done.]

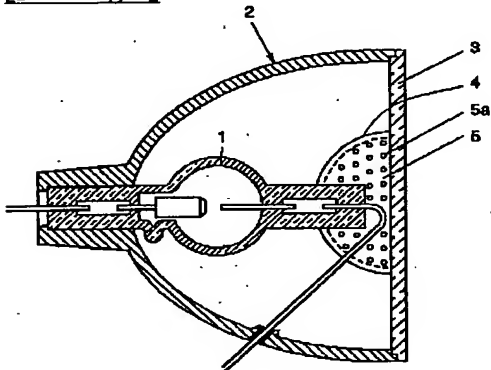
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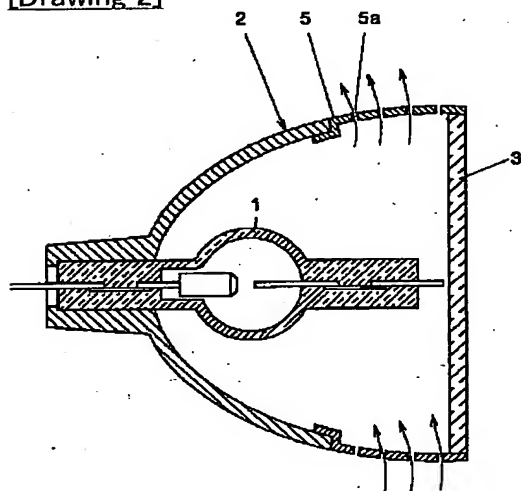
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DRAWINGS

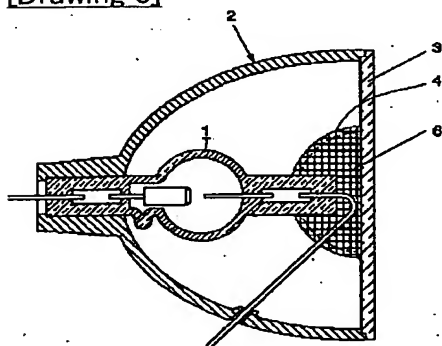
[Drawing 1]



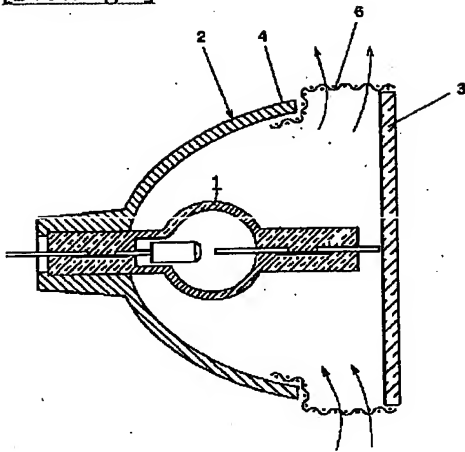
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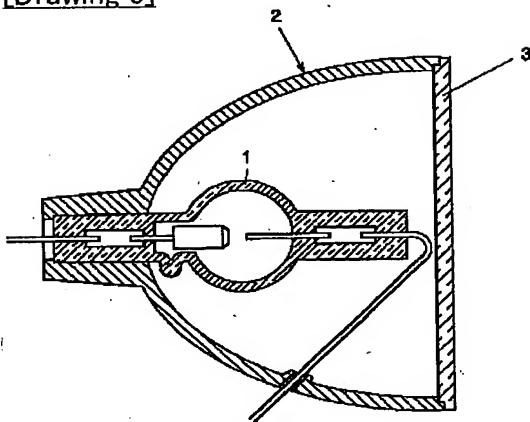
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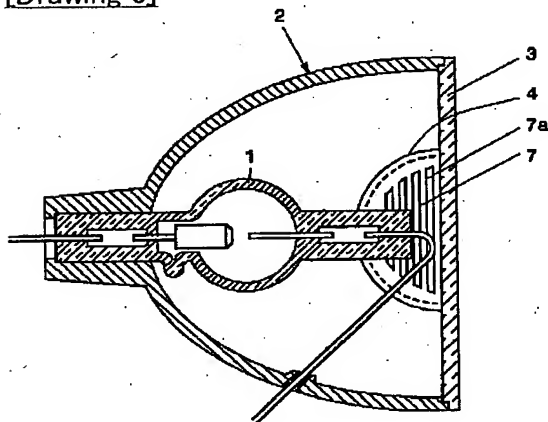
[Drawing 4]



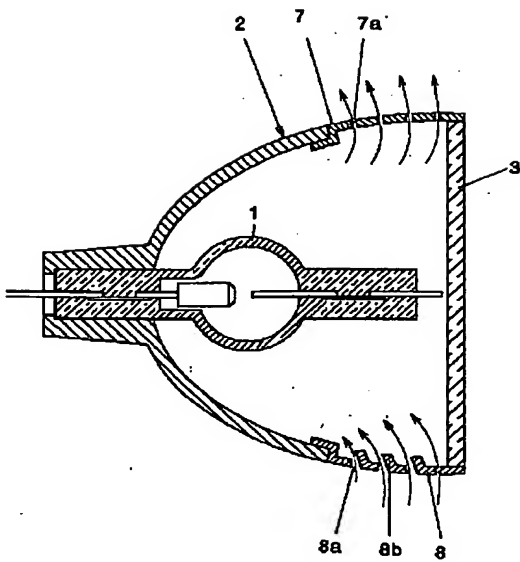
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]

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